

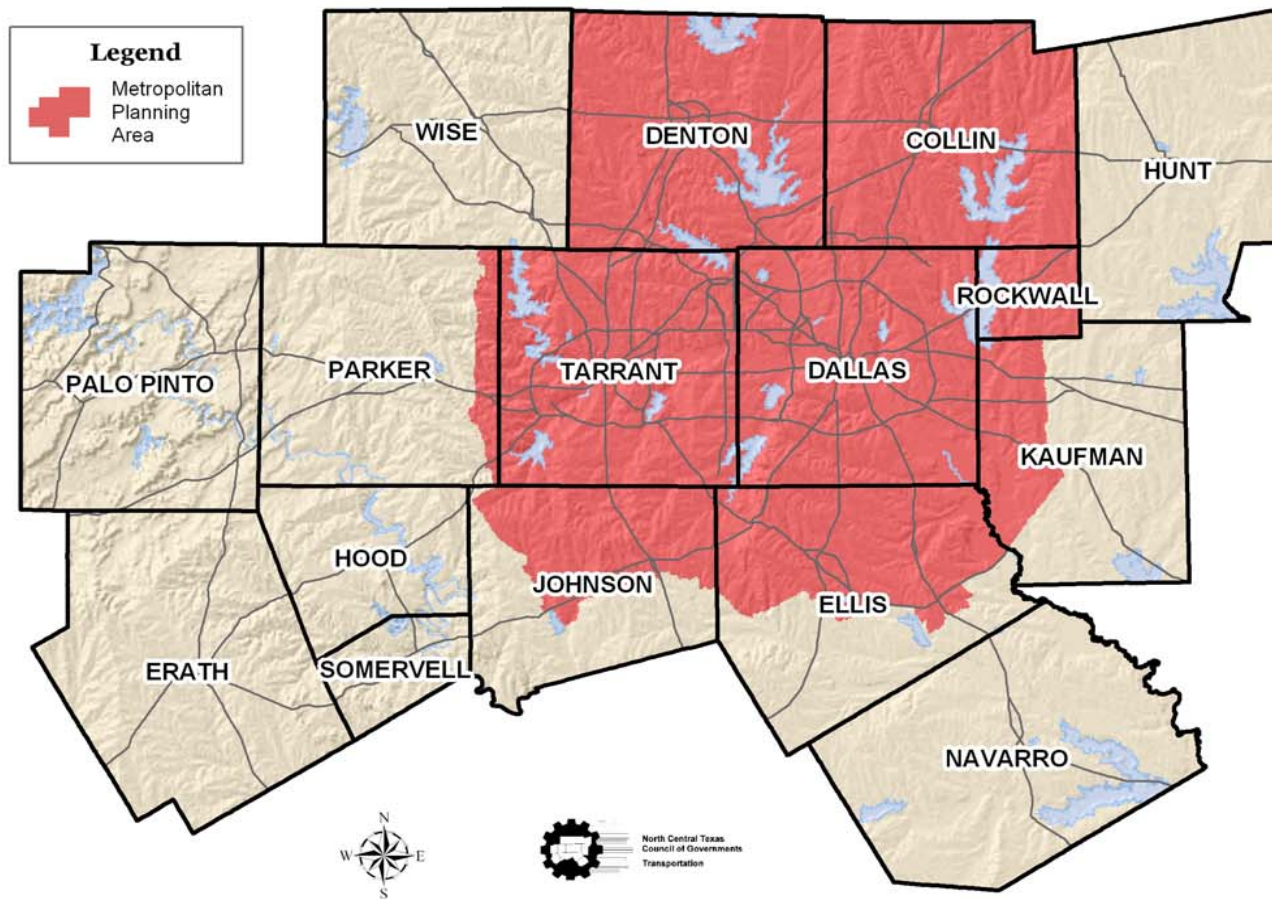
Travel Demand Modeling At NCTCOG

**Ken Cervenka, P.E., AICP
North Central Texas Council Of Governments**

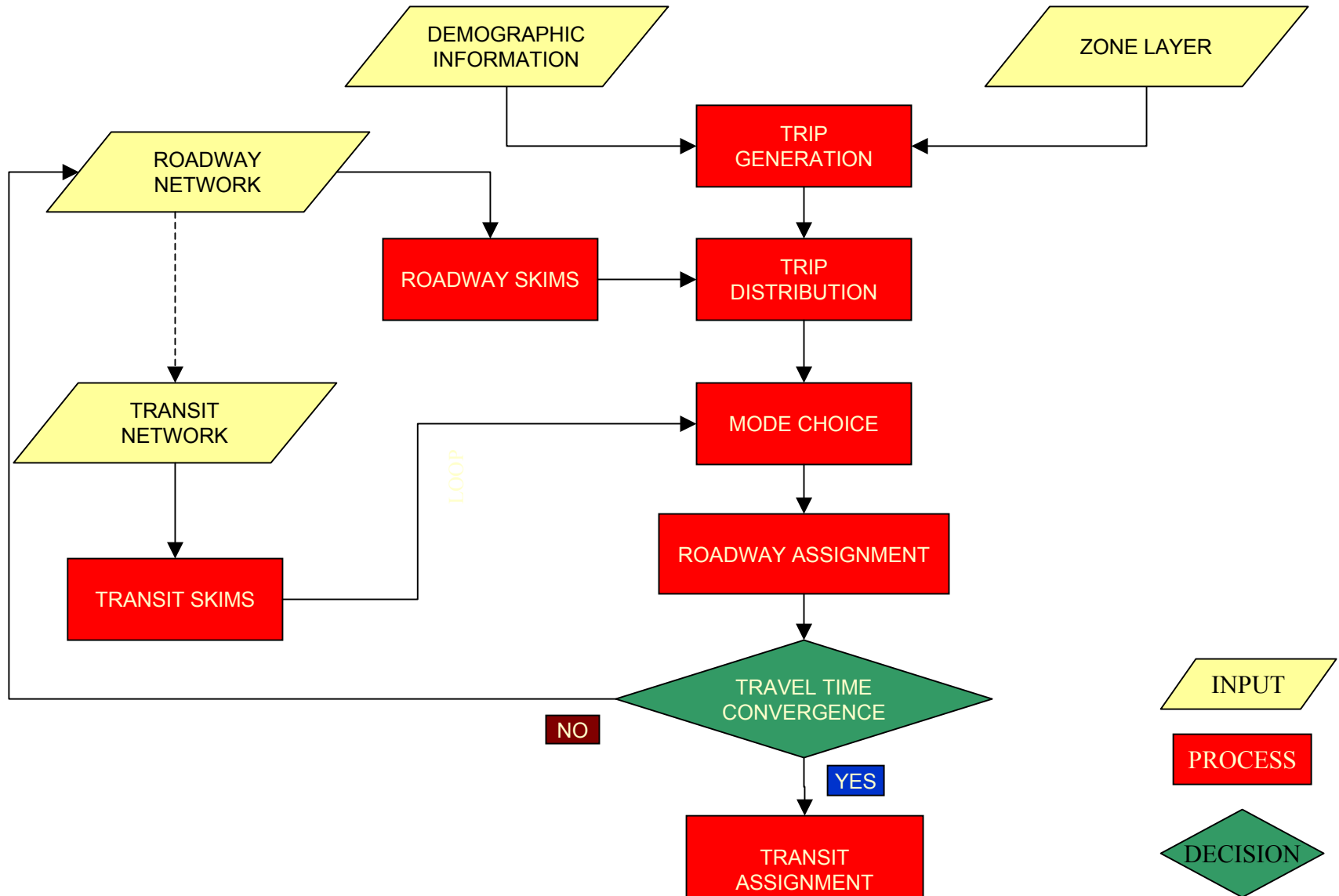
For

**Memphis TMIP Peer Review
October 27 – 28, 2004**

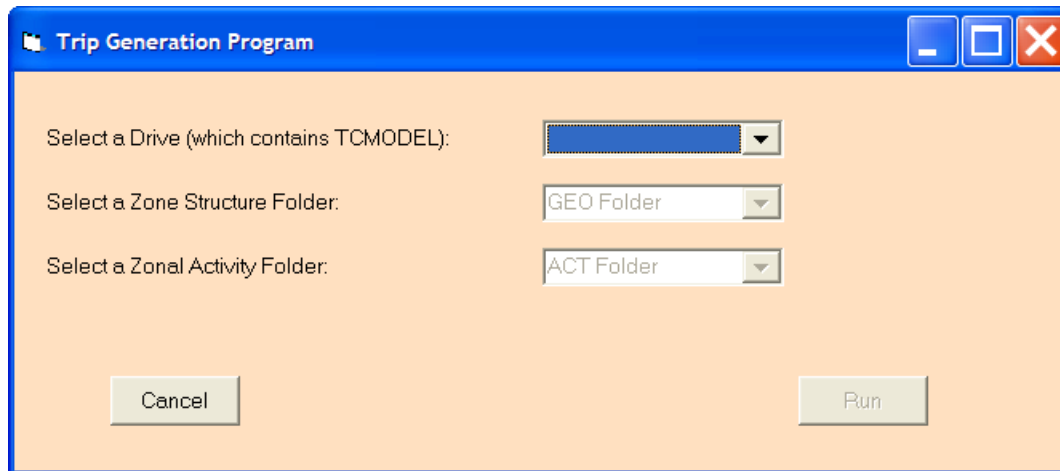
Metropolitan Planning Area Within the NCTCOG Region



Four-Step TRANSCAD Modeling Process



User Interface: Trip Generation



The image shows a screenshot of a Windows-style application window titled "Trip Generation Program". The window has a blue title bar with standard minimize, maximize, and close buttons. The main area has a light orange background. It contains three labels with corresponding dropdown menus: "Select a Drive (which contains TCMODEL):", "Select a Zone Structure Folder:", and "Select a Zonal Activity Folder:". The first dropdown is currently empty, while the second and third show "GEO Folder" and "ACT Folder" respectively. At the bottom, there are two buttons: "Cancel" on the left and "Run" on the right.

Trip Generation Program

Select a Drive (which contains TCMODEL):

Select a Zone Structure Folder:

Select a Zonal Activity Folder:

User Interface: Full Model Run

Full Model Run Frame

Select a Drive Name:

Select a Roadway Network Folder (RDWY)

Select a Zone Structure Folder (GEO)

Select a Zonal Activity Folder (ACT)

Select an Airport Folder (APT)

Select a Transit Network Folder (TRNT)

Select an External Folder (EXT)

Number of Feedback Runs

Trip Distribution

Gamma-Format Gravity Model (7 Purposes)

Four HBW Groups (Income Quartiles) – AM Peak

HNW (Non-Airport) – OffPeak

NHB (Non-Airport) – OffPeak

Trucks (Vehicles With Six Or More Tires) – OffPeak

Base Year Trip Table Factoring (6 Purposes)

HNW And NHB Airport Trips

Four External-Related Auto/Truck Trips

Mode Choice Market Segmentation

Six For HBW And Six For HNW

- **Household Income (3)**
 - **Low**
 - **Medium**
 - **High**
- **Vehicle Availability For A Household (2)**
 - **Vehicles Less Than Persons**
 - **Vehicles Greater Than Or Equal To Persons**

NHB Trip Table Not Segmented

Traffic Assignment

User Equilibrium Generalized Cost (Three 30-Iteration Assignments)

A.M. Peak (6:30a – 8:59a: 2.5 hours)

P.M. Peak (3:00p – 6:29p: 3.5 hours)

OffPeak (18 hours)

Four Vehicle Classes Loaded Simultaneously

Drive Alone

Shared-Ride (Sees HOV Lanes)

Shared-Ride (Doesn't See HOV)

Trucks (Vehicles With 6 Or More Tires)

What Happens Next

Model Updates (0 - 3 Years)

More Output Report Summaries (Tables, Graphs, Thematics)

LOGSUM Consistencies (Distribution And Mode Choice)

Trip Distribution--Destination Choice Tests

Expansion Of Modeled Area

Updated Land Use Modeling Tools

Additional Time Period Breakdowns For Traffic Assignment

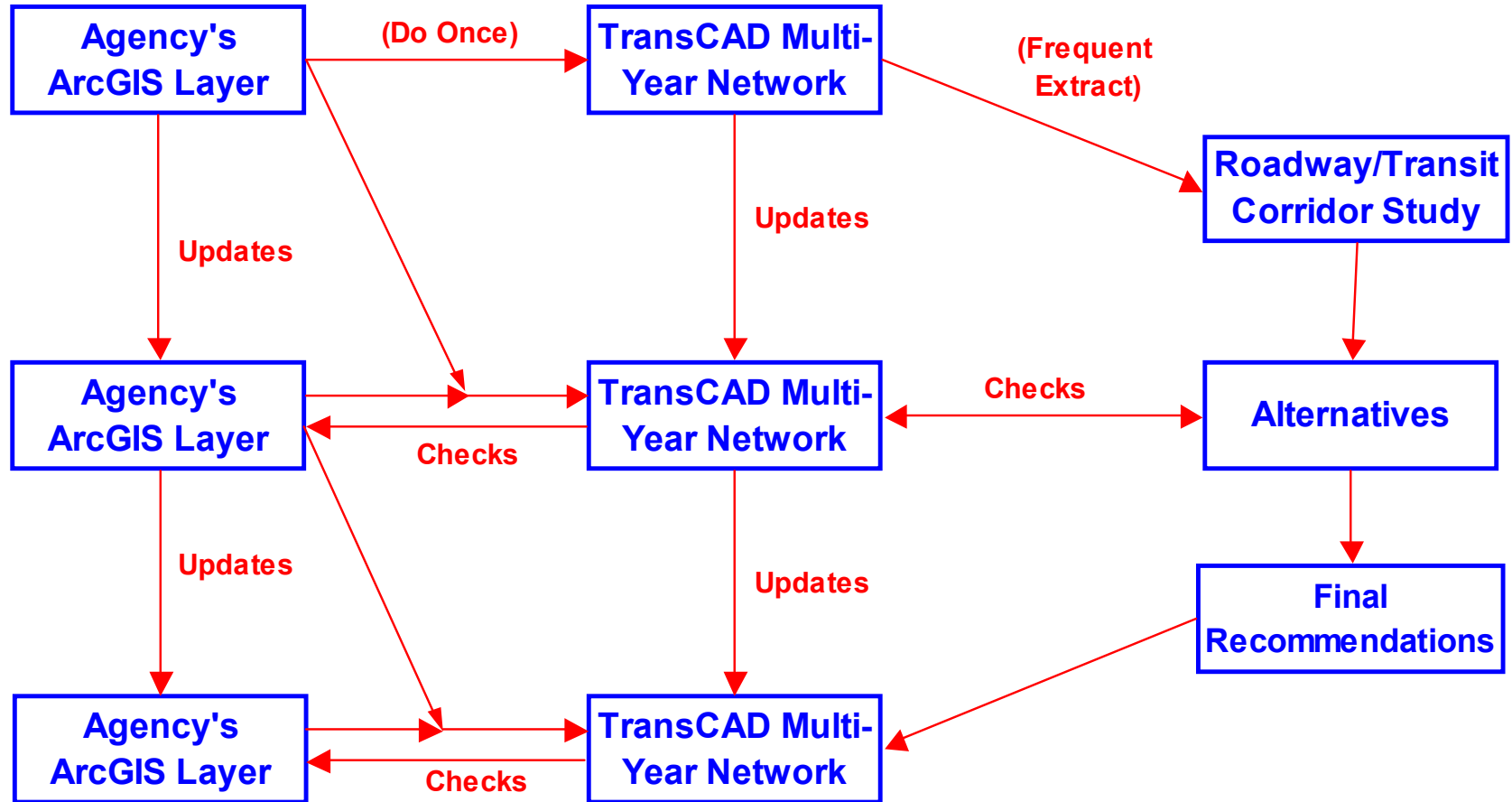
Tests Of “Generic” Transit Skim/Mode Choice Procedures

Sensitivity Tests Of Activity-Based Model (CEMDAP)

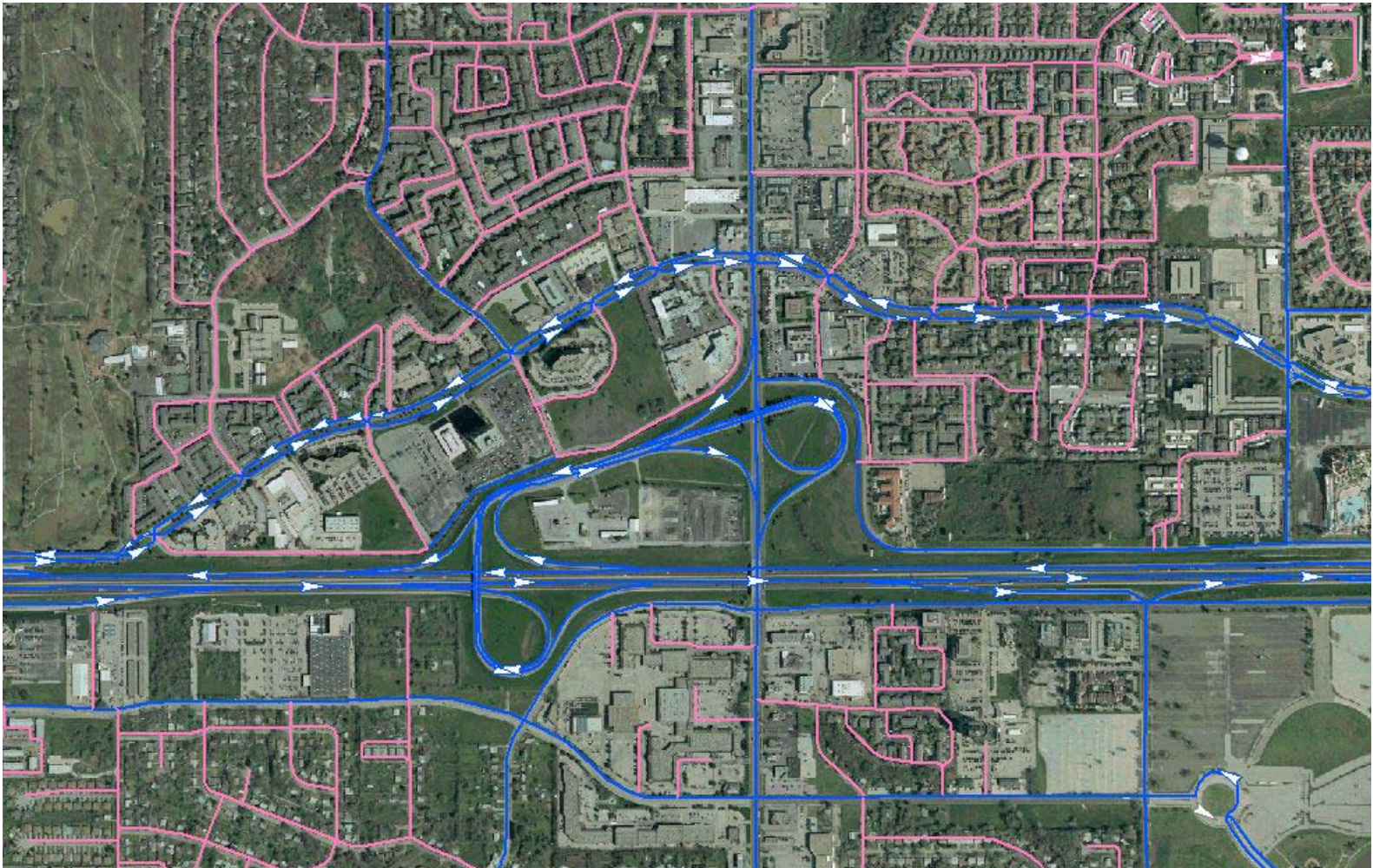
Coordination With TxDOT Statewide Analysis Model

Traffic Microsimulation For Subarea Operations Analysis

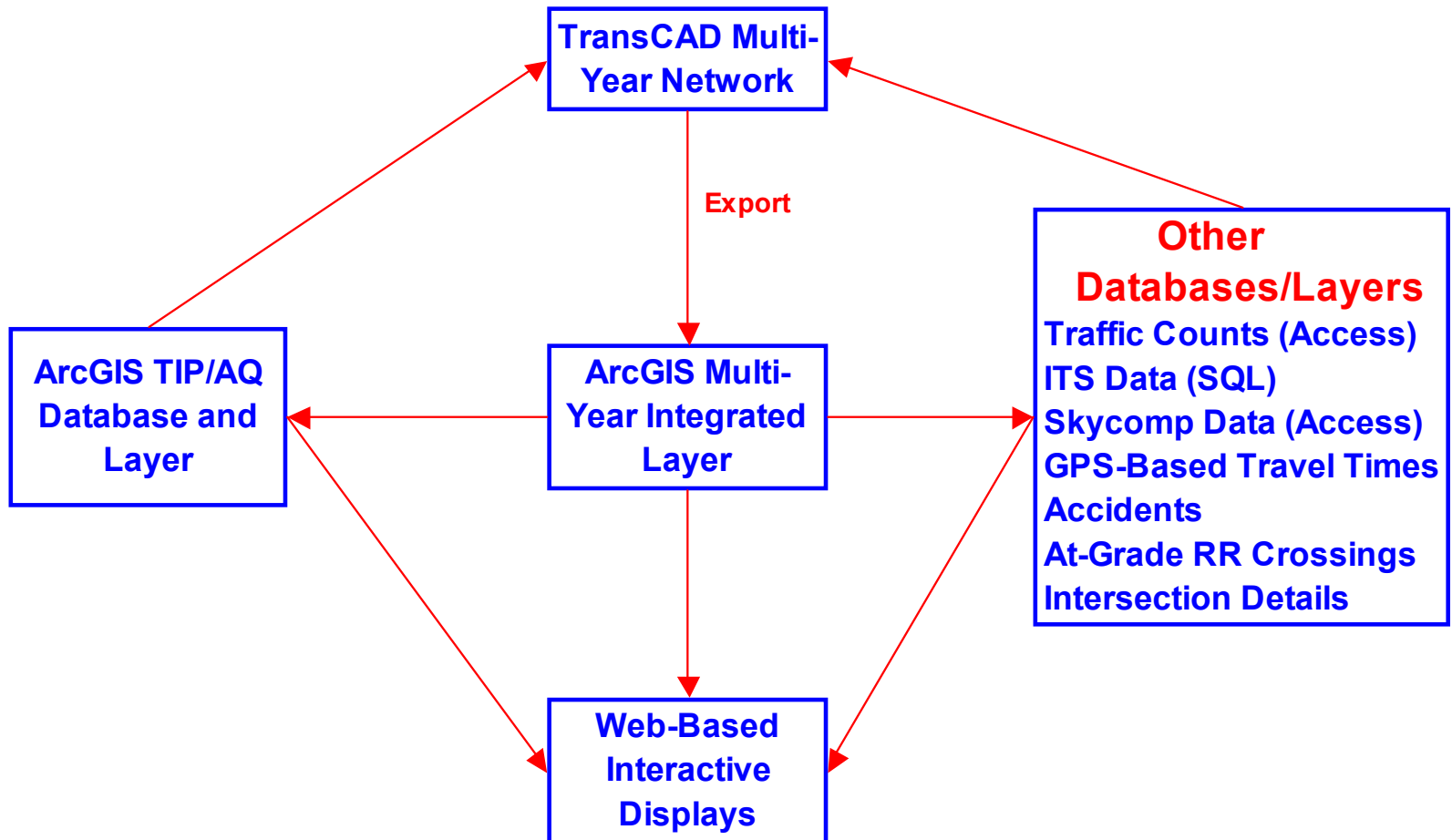
Network Coding Environment



Example: Blue Street Links Are Extracted To Travel Model Links



GIS Database Integration



TMIP Review Panel Charge (General)

Advise the Memphis Model Steering Committee and MPO staff on their development of a new travel demand model for the Memphis area

Help ensure the successful implementation of a state-of-the-practice four-step model that will be used in developing the Regional Transportation Plan, the Transportation Improvement Program, and Air Quality Conformity determinations

TMIP Review Panel Charge (Specific Activities)

Review and comment on model milestones, memos, presentations, and reports

Clarify specific aspects of the model development process to determine if the foreseeable needs of the MPO and regional planning community are addressed

Make recommendations toward solutions to any obstacles encountered, to help keep the project within the available budget and timeframe

Offer insights regarding a longer-term future model improvement program